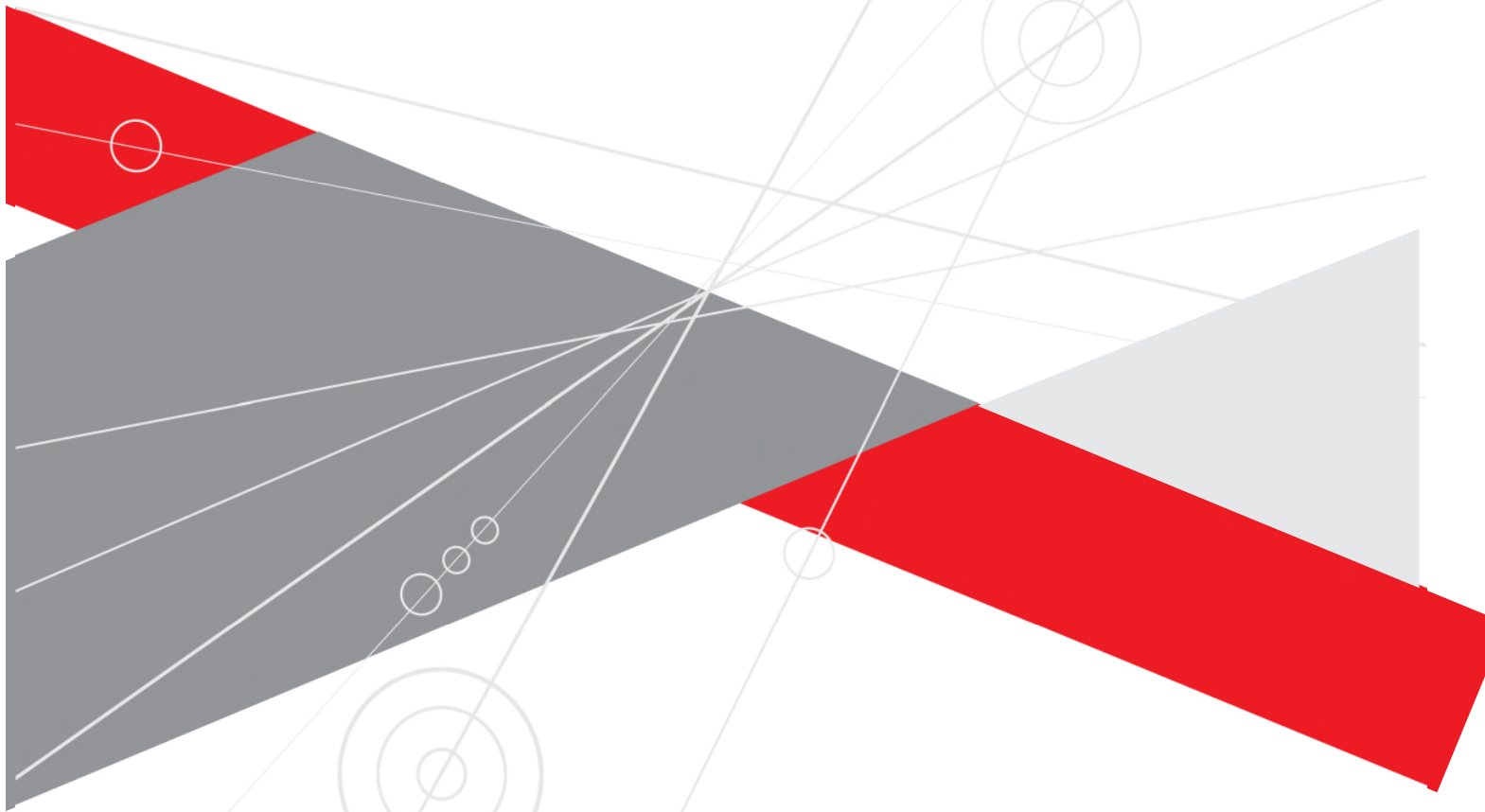


BUFFELSPOORT SOLAR PV ENERGY FACILITY

North West Province

Social Impact Assessment

October 2022



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REPORT DETAILS

Title	:	Social Impact Assessment (SIA) Scoping Report: Buffelspoort Solar PV Energy Facility
Authors	:	Savannah Environmental (Pty) Ltd Nondumiso Bulunga Molatela Ledwaba
External Peer Review	:	Tony Barbour
Client	:	Buffelspoort Solar Project (Pty) Ltd
Report Revision	:	Revision 1
Date	:	October 2022

When used as a reference this report should be cited as: Savannah Environmental (2022) Social Impact Assessment (SIA) Report for the Buffelspoort Solar PV Energy Facility, North West Province.

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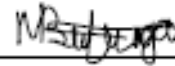
SPECIALIST DECLARATION OF INTEREST

I, Nondumiso Bulunga, declare that –

- » I act as the independent specialist in this application.
- » I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant.
- » I declare that there are no circumstances that may compromise my objectivity in performing such work.
- » I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity.
- » I will comply with the Act, Regulations and all other applicable legislation.
- » I have no, and will not engage in, conflicting interests in the undertaking of the activity.
- » I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing – any decision to be taken with respect to the application by the competent authority, and – the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority.
- » All the particulars furnished by me in this form are true and correct.
- » I realise that a false declaration is an offence in terms of Regulation 48 and is punishable in terms of section 24F of the Act.

Nondumiso Bulunga

Name



Signature

10 August 2022

Date

I, Molatela Ledwaba, declare that –

- » I act as the independent specialist in this application.
- » I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant.
- » I declare that there are no circumstances that may compromise my objectivity in performing such work.
- » I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity.
- » I will comply with the Act, Regulations and all other applicable legislation.
- » I have no, and will not engage in, conflicting interests in the undertaking of the activity.
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- » All the particulars furnished by me in this form are true and correct.
- » I realise that a false declaration is an offence in terms of Regulation 48 and is punishable in terms of section 24F of the Act.

Molatela Ledwaba



Name

Signature

14 October 2022

Date

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FIGURES

Figure 4.1: Locality map illustrating the location of the Buffelspoort Solar PV Energy Facility, North West Province. 23

ACRONYMS

ABET	Adult Basic Education and Training
BPDM	Bojanala Platinum District Municipality
CLO	Community Liaison Officer
DoE	Department of Energy
DM	District Municipality
EA	Environmental Authorisation
EAP	Economically Active Population
ECA	Environment Conservation Act (No. 73 of 1989)
ECO	Environmental Control Officer
EHS	Environmental, Health and Safety
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
EPC	Engineering, Procurement and Construction
FET	Further Education and Training
GDP	Gross Domestic Product
GNR	Government Notice
GVA	Gross Value Added
I&AP	Interested and Affected Party
IDP	Integrated Development Plan
IEP	Integrated Energy Plan
IFC	International Finance Corporation
IRP	Integrated Resource Plan
km	Kilometre
kV	Kilovolt
LED	Local Economic Development
LM	Local Municipality
NEMA	National Environmental Management Act (No. 107 of 1998)
NDP	National Development Plan
O&M	Operation and Maintenance
PGDS	Provincial Growth and Development Strategy
PSDF	Provincial Spatial Development Framework
RES	Renewable Energy Strategy
SDF	Spatial Development Framework
SIA	Social Impact Assessment
SP	Significance Points
SWOT	Strengths, Weaknesses, Opportunities and Threats
SMME	Small Medium and Micro Enterprises

1. INTRODUCTION AND PROJECT DESCRIPTION

1.1 Introduction

Buffelspoort Solar Project (Pty) Ltd is proposing to develop a Solar Photovoltaic (PV) Energy Facility and associated infrastructure (hereafter referred to as the "**Project**"). The development of the Solar PV Energy Facility and associated infrastructure requires an Environmental Authorisation (EA) from the North West Department of Economic Development, Environment, Conservation and Tourism (NWDEDECT) in accordance with the National Environmental Management Act (No. 107 of 1998) (NEMA), and the Environmental Impact Assessment (EIA) Regulations, 2014 (GNR 326), as amended, subject to the completion of an Environmental Impact Assessment (EIA) process.

Nondumiso Bulunga and Molatela Ledwaba of Savannah Environmental (Pty) Ltd has been appointed as the independent social consultant responsible for undertaking a Social Impact Assessment (SIA) as part of the EIA process being conducted for the Project.

1.2 Project Description

Buffelspoort Solar Project (Pty) Ltd is proposing to develop, construct and operate a Solar Photovoltaic (PV) Energy Facility and associated infrastructure on Portions 75 and 134 of the Farm Buffelspoort 343JQ, located approximately 6 km west of Mooinooi, within the jurisdiction of the Rustenburg Local Municipality and the Bojanala Platinum District Municipality in the North-West Province. The proposed Project will have a contracted capacity of up to 40 MWp and will be known as the Buffelspoort Solar PV Energy Facility.

The purpose of the facility will be to supply power to a private offtaker through connecting to an existing 88kV Substation via a newly proposed ~ 2.5 km long 88kV single circuit overhead power line that will be routed over privately-owned properties from the onsite facility substation to the point of interconnection, north of the N4 Bakwena National highway. The construction of the Solar PV Energy Facility aims to enable the private off taker to diversify their energy mix and to reduce their reliance on Eskom supplied power and is a conscious effort for the offtaker to contribute to their sustainability targets and reduce their carbon footprint.

A grid connection corridor which varies in width from 200 m to 300 m and is up to 2.5 km in length has been identified for the assessment and suitable placement of the grid connection infrastructure. This corridor will provide for the avoidance of sensitive environment areas and features and technical considerations.

A Development footprint of up to ~77 ha has been identified within the proposed Project Site (~223ha) by Buffelspoort Solar Project (Pty) Ltd for the development of the Buffelspoort Solar PV Energy Facility. Infrastructure associated with the Solar PV Energy Facility will include the following:

- » Solar PV array comprising PV panels and mounting structures.
- » Inverters and transformers.
- » Cabling between the arrays.
- » Onsite facility substation.
- » 88kV single circuit overhead power line for the distribution of the generated power, which will be connected to an existing 88kV Substation just north of the proposed project site.

- » Battery Energy Storage System (BESS¹) – to be initiated at a later stage than the Solar PV Energy Facility.
- » Temporary laydown area.
- » Operations and Maintenance (O&M) building, which will include a site security office, warehouse, storage area and workshop.
- » Main access road (existing – to be upgraded with hard surface) and internal (new) gravel roads.
- » Fencing around the site, including an access gate.

1.3 Details of the Independent Specialist

Nondumiso Bulunga is the author and Molatela Ledwaba co-author of this SIA Report. Tony Barbour has undertaken an external review of this SIA and has provided an external reviewer's letter. Tony Barbour's letter is attached as **Appendix C**.

- » **Nondumiso Bulunga** – holds a master's degree in advanced Geographical Information System and has eight years of experience in the environmental field. Her key focus is on environmental and social impact assessments, public participation, stakeholder engagement environmental management screening as well as mapping using ArcGIS for a variety of environmental projects.
- » **Molatela Ledwaba** – holds a BA Environmental Management and has 13 years of experience. Her key focus is on Socio-Economic Baselines, Social Impact Assessment, public participation, stakeholder engagement, project coordination and production of maps using QGIS and ArcGIS for geohydrology and geological projects
- » **Tony Barbour** is a social specialist who has undertaken in the region of 230 SIA's, including approximately 100 SIA's for a renewable energy projects, including wind and solar energy facilities. All of the SIAs have included as assessment of socio-economic issues. In addition, he is the author of the Guidelines for undertaking SIA's as part of the EIA process commissioned by the Western Cape Provincial Environmental Authorities in 2007. These guidelines have been used throughout South Africa. Tony has also undertaken a number of SIAs for PV facilities within the North West Province and is therefore familiar with the local socio-economic conditions.

¹ The BESS is included as part of the ESIA process albeit that the facility will only be installed after the Solar PV Energy Facility has come into operation. The total electricity requirements for the off-taker is currently under review and an energy master plan is being developed, which will only be finalised post implementation of the Solar PV Energy Facility to address all the electricity needs of the off-taker. The BESS has been included in this ESIA in order to ensure that should the energy master plan require this component to be included sooner than expected that it has already been authorised

1.4 Structure of the SIA Report

This SIA Report has been prepared in accordance with the requirements of Appendix 6 of the 2014 EIA Regulations, as amended. An overview of the contents of this SIA Report, as prescribed by Appendix 6 of the 2014 EIA Regulations (GNR 326), and where the corresponding information can be found within the report is provided in **Table 1-1**

Table 1-1 Summary of where the requirements of Appendix 6 of the 2014 NEMA EIA Regulations (GNR 326), as amended, are provided within this Specialist Report.:

Requirement	Location in Report
(a) Details of – (i) The specialist who prepared the report. (ii) The expertise of that specialist to compile a specialist report including a curriculum vitae.	Section 1
(b) A declaration that the specialist is independent in a form as may be specified by the competent authority.	Specialist Declaration of Interest
(c) An indication of the scope of, and the purpose for which, the report was prepared.	Section 2
(cA) An indication of the quality and age of base data used for the specialist report.	Section 4
(cB) A description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change.	Section 5
(d) The duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment.	Section 2
(e) A description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used.	Section 2
(f) Details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives.	Section 4 Section 5
(g) An identification of any areas to be avoided, including buffers.	N/A
(h) A map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers	N/A
(i) A description of any assumptions made and any uncertainties or gaps in knowledge.	Section 2
(j) A description of the findings and potential implications of such findings on the impact of the proposed activity or activities.	Section 5
(k) Any mitigation measures for inclusion in the EMP.	Appendix A
(l) A description of any consultation process that was undertaken during the course of preparing the specialist report.	Section 2
(m) A summary and copies of any comments received during any consultation process and where applicable all responses thereto.	N/A
(n) Any other information requested by the competent authority.	N/A
2. Where a government notice gazetted by the Minister provides for any protocol or minimum information requirement to be applied to a specialist report, the requirements as indicated in such notice will apply.	N/A

2. METHODOLOGY AND APPROACH

2.1 Purpose of the Study

The International Principles for Social Impact Assessment define SIA as:

"The processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions".

The International Principles for Social Impact Assessment define social impacts as changes to one or more of the following:

- » People's way of life – that is, how they live, work, play and interact with one another on a day-to-day basis.
- » Their culture – that is, their shared beliefs, customs, values and language or dialect.
- » Their community – its cohesion, stability, character, services and facilities.
- » Their political systems – the extent to which people are able to participate in decisions that affect their lives, the level of democratisation that is taking place, and the resources provided for this purpose.
- » Their environment – the quality of the air and water people use, the availability and quality of the food they eat, the level of hazard or risk, dust and noise they are exposed to, the adequacy of sanitation, their physical safety, and their access to and control over resources.
- » Their health and wellbeing – health is a state of complete physical, mental, social and spiritual wellbeing and not merely the absence of disease or infirmity.
- » Their personal and property rights – particularly whether people are economically affected, or experience personal disadvantage which may include a violation of their civil liberties.
- » Their fears and aspirations – their perceptions about their safety, their fears about the future of their community, and their aspirations for their future and the future of their children.

The purpose of this SIA Report is therefore to:

- » Provide baseline information describing the social environment within which the project is proposed, and which may be impacted (both positively and negatively) as a result of the proposed Project.
- » Identify, describe and assess possible social risks / fatal flaws and social impacts that may arise as a result of the proposed Project (in terms of the detailed design and construction, operation, and decommissioning phases of the proposed Project).
- » Recommend ways in which negative impacts can be avoided, minimised, or their significance reduced, and positive impacts maximised or enhanced.

2.2 Approach to the Study

This SIA Report provides a snapshot of the current social setting within which the Buffelspoort Solar PV Energy Facility is proposed. It provides an overview of the manner and degree to which the current status quo is likely to change or be impacted by the construction, operation and decommissioning of the Project, as well as the manner in which the social environment is likely to impact on the development itself.

The SIA process comprised the following:

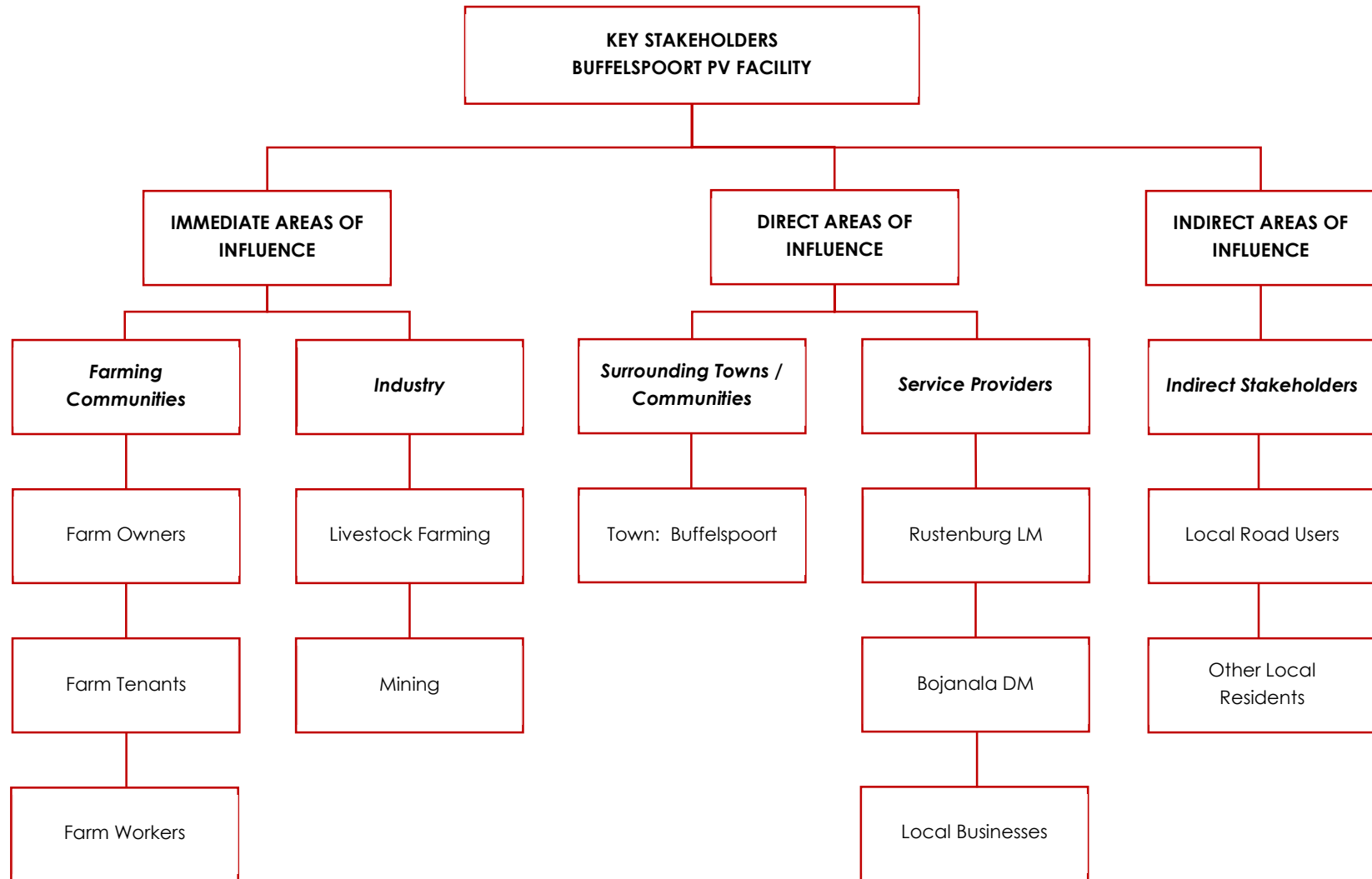
- » Collection and review of existing information, including national, provincial, district, and local plans, policies, programmes, census data, and available literature from previous studies conducted within the area. Project specific information was obtained from the Project Proponent.
- » Identification of potential direct, indirect and cumulative impacts likely to be associated with the construction, operation, and decommissioning of the proposed Project. Impacts associated with construction can also be expected to be associated with the decommissioning phase (however, to a lesser extent as the Development Footprint would have previously undergone transformation and disturbance during construction).
- » Preparation of a SIA Report for inclusion in the EIA Report to be prepared for the development footprint.

2.3 Stakeholder Identification and Analysis

Stakeholders are defined as: *"Any group or organisation which may affect or be affected by the issue under consideration"* (UN, 2001: 26).

These may be directly or indirectly impacted and may include organisations, institutions, groups of people or individuals, and can be at any level or position in society, from the international to regional, national, or household level (Franke & Guidero, 2012).

Stakeholder analysis involves the identification of affected or impacted people and their key grouping and sub-groupings (IFC, 2007). Identifying stakeholders that are directly and indirectly affected by the Project is important to determine who might be impacted by the development and in what way. The key stakeholders in the area proposed for development have been identified, grouped / sub-grouped and described (as per Ilse Aucamp SIA methodology and Aucamp et al, 2011). There are immediate, direct and indirect areas of influence to the proposed development. Affected stakeholders comprise sensitive social receptors that may potentially be affected by the proposed development based on their location.



2.4 Collection and Review of Existing Information

Existing desktop information that has relevance to the proposed project, project area and / or surrounds was collected and reviewed. The following information was examined as part of this process:

- » Project maps
- » Google Earth imagery.
- » A description of the proposed Project (as provided by the Project Proponent i.e. developer).
- » Census Data (2011), and the Local Government Handbook (2019).
- » Planning documentation such as Provincial Growth and Development Strategies (PGDSs), Local and District Municipality Integrated Development Plans (IDPs), Spatial Development Frameworks (SDFs), and development goals and objectives.
- » Relevant legislation, guidelines, policies, plans, and frameworks.
- » Available literature pertaining to social issues associated with the development and operation of solar PV power plants and associated infrastructure.

2.5 Limitations and Assumptions

The following assumptions and limitations are applicable to this SIA Report:

- » Data derived from the 2011 Census, , North West Provincial Development Plan (PDP), 2030 (2013), North West Provincial Growth and Development Strategy (PGDS) (2004 – 2014), Renewable Energy Strategy for the North West Province (2012), North West Provincial Spatial Development Framework (2017), Rustenburg Municipality Spatial Development Framework-Draft (2018), Rustenburg Municipality Integrated Development Plan (2021/22) review was used to generate the majority of information provided in the baseline profile of the broader study area and the grid connection corridor. The possibility exists that some of the data utilised may be out of date and may not provide an accurate reflection of the current status quo.
- » This SIA Report was prepared based on information that was available to the specialist at the time of preparing the report. The sources consulted are not exhaustive, and the possibility exists that additional information which might strengthen arguments, contradict information in this report, and / or identify additional information might exist. Additional information available from the public participation undertaken during the Scoping process was included and considered within the final report, where relevant.
- » Some of the project projections reflected in this SIA Report may be subject to change, and therefore may be higher or lower than those estimated by the Project Proponent.
- » It is assumed that the motivation for, and planning and feasibility study of the Project were undertaken with integrity, and that information provided by the project proponent was accurate and true at the time of preparing this SIA Report.

2.6 Collection of Primary Data

Primary data was collected in the form -of meeting notes from Focus Group Meetings (FGMs) conducted with key stakeholders as part of the Public Participation process being conducted for the Scoping process (refer to **Table 2-1**) and from interviews conducted with identified stakeholders and affected landowners.

Table 2-1: Overview of FGMs conducted as part of the Public Participation process being conducted for the Scoping Process

FGM Date & Time	Stakeholder Group	Summary of Matters Raised
Tuesday, 28 June 2022 at 17h00	Public Participation Process Meeting	No matters pertaining to social issues were raised.
Wednesday, 06 July 2022 at 09h00	Focus Group Meeting	Employment numbers were questioned and whether using technology to maintain that facility would be beneficial versus the number of jobs that could be created outside of the technological advances. It was questioned where the labour staff would come from to develop this facility.
Wednesday, 06 July 2022 at 11h00	Representative Officials	No matters pertaining to social issues were raised.
Wednesday, 06 July 2022 at 14h00	Key Stakeholders	No matters pertaining to social issues were raised.

Table 2-3: Overview of Telephonic Interviews with landowners and stakeholders as well as a attempt made to contact the relevant parties

Representative	Representative details	Date of contact / attempted contact	Notes and feedback (not verbatim, only summarised)
A T van Rensburg	Farm owner	30 September 2022; time 13:45	No objections to the proposed Project
Boitumelo Kgabi	Farm owner	30 September 2022; time 14:15	No objections to the proposed Project
Cornelius Smit	Farm owner	30 September 2022; time 14:45; 2 nd 03 October 2022- Time 11:49	Not answering
Dean Coetze	Farm owner	30 September 2022; time 14:47	No objections to the proposed Project
Janie Jacobs	Farm owner	30 September 2022; time 14:55	She is no longer staying in the area
Daniel Johannes Hermus	Farm owner	30 September 2022; time 15:15	He is no longer staying in the area; he sold his property
Elizabeth Aucamp	Farm owner	30 September 2022; time 15:20	She is no longer staying in the area.
Jan Botha Janse van Rensburg	Farm owner	30 September 2022; time 15:45	No objections to the proposed Project
John Francis	Farm owner	30 September 2022; time 15:55	No objections to the proposed Project
Martyn Visagie	Farm owner	30 September 2022; time 16:00	He sold the property
Mahamed Karani	Farm owner	30 September 2022; time 16:05	No objections of the proposed Project
Rachel Sophia Elizabeth	Farm owner	30 September 2022; time 16:07	No one is living on the property at the moment, but they do not have any objections to the proposed Project
Victor David	Farm owner	30 September 2022; time 16:10; 2 nd 03 October 2022-Time 11:55	Not answering
Willem Jansen van Rensburg	Farm owner	30 September 2022; time 16:12; 2 nd 03 October 2022 – 12:03	Not answering

During the telephone interviews, interviewees were provided with background on the proposed Project, and the EIA and public participation process being undertaken in support of the application for EA. Interviewees were then interviewed utilising a questionnaire to determine their perceptions, interest and concerns regarding the Project.

The Bojanala District Municipality and Rustenburg Local Municipality were engaged, and their comments obtained as part of the EIA process being undertaken for the Project. Should any comments or concerns be

raised from a social perspective regarding the Project during the public participation process of the Project, these will be included and addressed as part of the final SIA to be submitted to NWDEDECT for decision.

2.7 Methodology for Assessing Impact Significance.

The impact assessment was undertaken using a matrix selection process, the most used methodology, for determining the significance of potential environmental impacts/risks. This methodology considers two aspects for assessing the potential significance of impacts, namely occurrence and severity, which are further sub-divided into the following categories in Table 2-2.

Table 2-2: Impact assessment factors

Occurrence			Severity	
Probability of occurrence	of	Duration of occurrence	Scale/extent of impact	Magnitude of impact

The following definitions were used for the methodology outlined in Table 2.3

- » **Magnitude** is a measure of the degree of change in a measurement of analysis and is classified as none/negligible, low, moderate or high;
- » **Scale/ Geographic extent** refers to the area that could be affected by the impact and is classified as site, local, regional, national, or international;
- » **Duration** refers to the length of the time over which an environmental impact may occur: i.e. immediate/ transient, short-term, medium-term, long-term or permanent; and
- » **Probability** of occurrence is a description of the probability of the impact actually occurring as improbable (< 5% chance) low probability (5% - 40% chance), medium probability (40% - 60% chance), high probable (most likely, 60% - (0% chance) or definite (Impact will definitely occurs).

Table 2.3: Rating scales utilized to evaluate these criteria for each impact

Value	Description
Magnitude	
10	Very high/ unknown
8	High
6	Moderate
4	Low
2	Minor
Duration	
5	Permanent (impact continues post closure)
4	Long-Term (>15 years) (Impact ceases after decommissioning and closure)
3	Medium-term (5-15 years) (Impact ceases after the operational phase)
2	Short-term (2-5 years) (impact ceases after the construction phases)
1	Immediate (0-1 year)
Value	
Description	
Scale/ Geographic Extent	
5	International

4	National
3	Regional
2	Local
1	Site Only
0	None
Probability	
5	Definite/ Unknown (impact will definitely occur)
4	Highly Probable (most likely, 60% - 90% chance)
3	Medium Probability (40% - 60% chance)
2	Low Probability (5% - 40% chance)
1	Improbable (less than 5% chance)
0	None

Significance Points = (Magnitude + Duration + Scale) x Probability.

Table 2-4: Significance of impact based on point allocation

Points	Significance	Description
SP>60	High environmental significance	An impact which could influence the decision about whether or not to proceed with the project regardless of any possible mitigation.
SP 30-60	Moderate environmental significance	An impact or benefit which is sufficiently important to require management, and which could have an influence on the decision unless it is mitigated.
SP<30	Low environmental significance	Impacts with little real effect and which will not have an influence on or require modification of the project design.

3. LEGISLATION AND POLICY REVIEW

The legislative and policy context applicable to a project plays an important role in identifying and assessing the potential social impacts associated with the development. In this regard a key component of the SIA process is to assess a proposed development in terms of its suitability with regards to key planning and policy documents.

The following key pieces of documentation were reviewed as part of this legislation and policy review process:

3.1 National Policy and Planning Context:

- » Constitution of the Republic of South Africa, 1996
- » National Environmental Management Act (No. 107 of 1998) (NEMA)
- » White Paper on the Energy Policy of the Republic of South Africa (1998)
- » National Energy Act (No. 34 of 2008)
- » Integrated Energy Plan (IEP) (2016)
- » National Development Plan (NDP) 2030 (2012)

3.2 Provincial Policy and Planning Context:

- » North West Provincial Growth and Development Strategy (2004-2014)
- » North West Provincial Renewable Energy Strategy (2012).

3.3 Local Policy and Planning Context:

- » Rustenburg Municipality Spatial Development Framework-Draft (2018).
- » Rustenburg Municipality Integrated Development Plan (2021/22).
- » Bojanala Platinum District Integrated Development Plan (2021/22).

3.4 National Policy and Planning Context

Any project which contributes positively towards the objectives mentioned within national policies could be considered strategically important for the country. A review of the national policy environment suggests that the connection infrastructure is considered integral to contributing towards social upliftment and economic development, even if only limited in extent.

A brief review of the most relevant national legislation and policies is provided in table format (**Table 3.1**) below.

Table 4-1: Relevant national legislation and policies for the Buffelspoort Solar PV Energy Facility

Relevant legislation or policy	Relevance to the proposed project
Constitution of the Republic of South Africa, 1996	Section 24 of the Constitution pertains specifically to the environment. It states that everyone has the right to an environment that is not harmful to their health or well-being, and to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation, promote conservation and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

Relevant legislation or policy	Relevance to the proposed project
	<p>The Constitution outlines the need to promote social and economic development. Section 24 of the Constitution therefore requires that development be conducted in such a manner that it does not infringe on an individual's environmental rights, health, or well-being. This is especially significant for previously disadvantaged individuals who are most at risk to environmental impacts.</p>
<p>National Environmental Management Act (No. 107 of 1998) (NEMA)</p>	<p>This piece of legislation is South Africa's key piece of environmental legislation and sets the framework for environmental management in South Africa. NEMA is founded on the principle that everyone has the right to an environment that is not harmful to their health or well-being as contained within the Bill of Rights.</p> <p>The national environmental management principles state that the social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.</p> <p>The need for responsible and informed decision-making by government on the acceptability of environmental impacts is therefore enshrined within NEMA.</p>
<p>National Development Plan 2030 (2012)</p>	<p>The National Development Plan (NDP) 2030 is a plan prepared by the National Planning Commission in consultation with the South African public which is aimed at eliminating poverty and reducing inequality by 2030.</p> <p>In terms of the Energy Sector's role in empowering South Africa, the NDP envisages that, by 2030, South Africa will have an energy sector that promotes:</p> <ul style="list-style-type: none"> » Economic growth and development through adequate investment in energy infrastructure. The sector should provide reliable and efficient energy service at competitive rates, while supporting economic growth through job creation. » Social equity through expanded access to energy at affordable tariffs and through targeted, sustainable subsidies for needy households. » Environmental sustainability through efforts to reduce pollution and mitigate the effects of climate change. <p>The NDP aims to provide a supportive environment for growth and development, while promoting a more labour-absorbing economy.</p> <p>The development of the Solar PV Energy Facility and associated infrastructure is considered to be relevant to the NDP due to the need of the infrastructure for economic growth within the Rustenburg Local Municipality.</p>
<p>National Energy Act (Act No 43 of 2008)</p>	<p>The National Energy Act was promulgated in 2008 (Act No 34 of 2008). One of the objectives of the Act was to promote diversity of supply of energy and its sources. In this regard, the preamble makes direct reference to renewable resources, including solar and wind:</p> <p>"To ensure that diverse energy resources are available, in sustainable quantities, and at affordable prices, to the South African economy, in support of economic growth and poverty alleviation, taking into account environmental management requirements (...); to provide for (...) increased generation and consumption of renewable energies..." (Preamble).</p>
<p>White Paper on the Energy Policy of the</p>	<p>Investment in renewable energy initiatives, such as the proposed Solar PV Energy Facility, is supported by the White Paper on Energy Policy for South Africa (December 1998). In this regard, the document notes:</p>

Relevant legislation or policy	Relevance to the proposed project
<p>Republic of South Africa.</p>	<p>“Government policy is based on an understanding that renewables are energy sources in their own right, are not limited to small-scale and remote applications, and have significant medium and long-term commercial potential”.</p> <p>“Renewable resources generally operate from an unlimited resource base and, as such, can increasingly contribute towards a long-term sustainable energy future”.</p> <p>The support for renewable energy policy is guided by a rationale that South Africa has a very attractive range of renewable resources, particularly solar and wind and that renewable applications are in fact the least cost energy service in many cases; more so when social and environmental costs are taken into account.</p> <p>Government policy on renewable energy is thus concerned with meeting the following challenges:</p> <ul style="list-style-type: none"> » Ensuring that economically feasible technologies and applications are implemented; » Ensuring that an equitable level of national resources is invested in renewable technologies, given their potential and compared to investments in other energy supply options; and, » Addressing constraints on the development of the renewable industry. <p>The White Paper also acknowledges that South Africa has neglected the development and implementation of renewable energy applications, despite the fact that the country’s renewable energy resource base is extensive, and many appropriate applications exist.</p> <p>The White Paper also notes that renewable energy applications have specific characteristics that need to be considered. Advantages include:</p> <ul style="list-style-type: none"> » Minimal environmental impacts in operation in comparison with traditional supply technologies; and » Generally lower running costs, and high labour intensities. <p>Disadvantages include:</p> <ul style="list-style-type: none"> » Higher capital costs in some cases. » Lower energy densities. » Lower levels of availability, depending on specific conditions, especially with sun and wind-based systems.
<p>Integrated Energy Plan (IEP) (2016)</p>	<p>The development of a National Integrated Energy Plan (IEP) was envisaged in the White Paper on the Energy Policy of the Republic of South Africa of 1998 and, in terms of the National Energy Act, 2008 (Act No. 34 of 2008), the Minister of Energy is mandated to develop and, on an annual basis, review and publish the IEP in the Government Gazette. The purpose of the IEP is to provide a roadmap of the future energy landscape for South Africa which guides future energy infrastructure investments and policy development.</p> <p>The IEP notes that South Africa needs to grow its energy supply to support economic expansion and in so doing, alleviate supply bottlenecks and supply-demand deficits. In addition, it is essential that all citizens are provided with clean and modern forms of energy at an affordable</p>

Relevant legislation or policy	Relevance to the proposed project
	<p>price. As part of the Integrated Energy Planning process, eight key objectives were identified, namely:</p> <ul style="list-style-type: none"> » Objective 1: Ensure security of supply. » Objective 2: Minimise the cost of energy. » Objective 3: Promote the creation of jobs and localisation. » Objective 4: Minimise negative environmental impacts from the energy sector. » Objective 5: Promote the conservation of water. » Objective 6: Diversify supply sources and primary sources of energy. » Objective 7: Promote energy efficiency in the economy. » Objective 8: Increase access to modern energy. <p>The IEP provides an assessment of current energy consumption trends within different sectors of the economy (i.e. agriculture, commerce, industry, residential and transport) and uses this information to identify future energy requirements, based on different scenarios. The scenarios are informed by different assumptions on economic development and the structure of the economy and also take into account the impact of key policies such as environmental policies, energy efficiency policies, transport policies and industrial policies, amongst others.</p> <p>Based on this information the IEP then determines the optimal mix of energy sources and technologies to meet those energy needs in the most cost-effective manner for each of the scenarios. The associated environmental impacts, socio-economic benefits and macroeconomic impacts are also analysed. The IEP is therefore focused on determining the long-term energy pathway for South Africa, taking into account a multitude of factors which are embedded in the eight objectives.</p> <p>The IEP notes that South Africa should continue to pursue a diversified energy mix which reduces reliance on a single or a few primary energy sources. In terms of renewable energy, the document refers to wind and solar energy. The document does however appear to support solar over wind noting that solar PV and CSP with storage present excellent opportunities to diversify the electricity mix, to produce distributed generation and to provide off-grid electricity. Solar technologies also present the greatest potential for job creation and localisation. Incentive programmes and special focused programmes to promote further development in the technology, as well as solar roll-out programmes, should be pursued.</p> <p>Solar</p> <ul style="list-style-type: none"> » Solar should play a much more significant role in the electricity generation mix than it has done historically and constitutes the greatest share of primary energy (in terms of total installed capacity) by 2050. The contribution of solar in the energy mix comprises both CSP and solar PV. » Investments should be made to upgrade the grid in order to accommodate increasing solar and other renewable energy contributions.

3.5 Provincial Policies

This section provides a brief review of the most relevant provincial policies. The proposed Buffelspoort Solar PV Energy Facility considered to align with the aims of these policies, even if contributions to achieving the goals therein are only minor.

A brief review of the most relevant provincial policies is provided in table format (**Table 3.2**) below.

Table 3-2: Relevant provincial policies for the Buffelspoort Solar PV Energy Facility

Relevant policy	Relevance to the proposed project
<p>North-West Provincial Growth and Development Strategy (2004-2014)</p>	<p>The NWP Provincial Growth and Development Strategy (PGDS) was drafted in 2004 and aims to provide a framework for the 10-year period up to 2014. The PGDS is aligned with amongst others, the United Nations endorsed Millennium Development Goals and Objectives 2015, and the 2003 National Spatial Perspective. The PGDS largely relies on Census 2001 for demographic and other statistical data and is therefore dated. An up-dated version does not appear to be available.</p> <p>The PGDS notes that the NWP is a medium-size province, covering ~10% of the total national surface area, accounting for ~ 8% of the national population, and contributing ~ 7% to the national economy. Except for the mining sector (~23.5% of provincial Gross Domestic Product (IDP) in 2002), private sector activity in the NWP is very modest. Other development challenges include low population densities (largely rural province); inadequate infrastructure, and enormous service delivery backlogs; a predominantly poor population with high levels of illiteracy and dependency; great inequalities between rich and poor, and disparities between urban and rural; and the HIV/Aids pandemic.</p> <p>Both the primary immediate and long-term objectives of the PGDS are therefore to address poverty and unemployment, while simultaneously improving the low level of expertise and skills.</p> <p>The following cross-supporting economic development pillars support the NWP's economic growth and development strategy up to 2014:</p> <ul style="list-style-type: none"> » Growth and Investment. » Agricultural and Rural Development. » Mining and Energy » Manufacturing » Tourism » Construction and Infrastructure » Small Medium Micro Enterprise (SMME) » Training and Skills Development <p>SMME development is identified as key vehicle for meeting the dual challenges of growth and equitability, with an envisaged added potential for job creation, albeit currently often in the informal sector. The PGDS envisages that 60-80% of all future economic activities in provincial agriculture, mining, manufacturing, trade, and tourism should be SMME focused, but indicates that policy would ultimately be aligned with evolving national policy.</p> <p>Skills development and training are identified as key enabling factors for labour market access. It is envisaged that skills development should constitute part of a broader, integrated effort at promoting job creation, and that the focus should be on growing skills and vocational training, mainly in the services and financial sectors. Companies would be encouraged to promote employee development through on-the-job learning and learner ships. The development of a focused Adult Basic Education and Training (ABET) strategy is envisaged to address high illiteracy levels, and to facilitate further education and training (FET).</p>
<p>North-West Provincial</p>	<p>The Renewable Energy Strategy (RES) (2012) notes that the North West Province is the fourth largest electricity consuming province in South Africa (12%). The bulk of electricity is currently obtained from conventional coal-fired plants in Mpumalanga. Approximately 63% of the</p>

Relevant policy	Relevance to the proposed project
<p>Renewable Energy Strategy (2012).</p>	<p>electricity supplied to the NWP is consumed in its mining sector. Many rural communities within the NWP are affected by energy poverty – a legacy of historic neglect and underdevelopment – and make use of wood fuel, with impacts on the environment and health. At the same time, the emerging renewables sector holds potential for employment creation, green manufacturing, and commercial energy generation (linked to the IPP). The key objectives of the RES are therefore to:</p> <ul style="list-style-type: none"> » Reduce the North West Province's contribution to climate change » Alleviate energy poverty; and » Promote economic development and job creation in the province by developing a green economy <p>Various renewable energy source options were investigated in the RES. Solar (photovoltaic as well as solar water heaters), Municipal Solid Waste, hydrogen and fuel cell technologies, biomass, and energy efficiency were identified as sub-sectors/ sources which hold the greatest competitive potential in the NWP.</p> <p>With regard to solar, the RES notes that the NWP has a very good potential with daily average solar radiation rates of greater than 8 000 MJ/m². Only the Northern Cape Province (NCP) receives more radiation than the NWP.</p> <p>During the status quo assessment no barriers to the generation and use of solar PV systems within the NWP were identified, except for the only slightly lower levels of solar irradiation levels compared to the NCP and parts of Limpopo. The RES notes that this could potentially be offset by sufficient economies of scale. The NWP has sufficient land area available, and the electricity grid infrastructure is good in the areas of high economic activity and in the proximity of the numerous mines and related large industries concentrated in certain areas of the NWP. The infrastructure in the NWP is also generally good in the same areas. This implies that, although the NWP is not a preferred destination for Solar PV projects, it can be made one if some of the general barriers are removed for Project Proponent by the Province.</p>

3.6 District and Local Municipalities Policies

The strategic policies at a district and local level have similar objectives for the respective areas, namely to accelerate economic growth, create jobs, and uplift communities. The proposed Buffelspoort Solar PV Energy Facility is considered to align with the aims of these policies, even if contributions to achieving the goals therein are only minor.

A brief review of the most relevant district and local municipal policies is provided in table format (**Table 3.3**) below.

Table 3-3: Relevant district and local municipal policies for the Buffelspoort Solar PV Energy Facility

Relevant policy	Relevance to the proposed project
<p>Rustenburg Municipality Spatial Development Framework-Draft (2018).</p>	<p>The Draft SDF (2018) notes that the development of the of the urban landscape has also been driven by the development of the municipality's mobility routes linking the North-West province with Gauteng province. Development within the municipality has grown along the N4 transit corridor. The development of the mining industry within the municipality has also played a key role in terms of the evolution of the spatial development patterns. In this regard the development of Rustenburg over the past 20 – 25 years is closely linked with the development</p>

Relevant policy	Relevance to the proposed project
	<p>of platinum mining in the region. The Rustenburg Local Municipality ("RLM") benefitted significantly from the increase in platinum output between 1994 and 2009, which grew by 67%. This resulted in Rustenburg having the third fastest growing economy of metropolitan cities in South Africa prior to 2012, outperformed only by Johannesburg and Ekurhuleni (Euconomix, 2016).</p> <p>Section 4, spatial proposals, outlines the land use proposals for the RLM. Mining related land uses are of relevance to the proposed Project. The SDF notes that mining in the RLM predominantly occurs in a belt which runs north of and parallel to the Magaliesberg and extends from Pilanesberg in the north, past Rustenburg towards Marikana. These mining activities are not only the corner stone of the local economy of Rustenburg, but also largely within the North West Province.</p> <p>The SDF notes that it is important that the necessary infrastructure is created and maintained to ensure the continued optimal operation of these mining activities. This would include energy related infrastructure, such as the proposed Project. The SDF also notes that mining activities and infrastructure can have a significant impact on the current and future spatial structure of the urban area through the physical constraints it poses. These negative potential interactions between the mining activities and proposed future urban development should therefore be minimised as far as possible.</p>
<p>Rustenburg Municipality Integrated Development Plan (2021/22)</p>	<p>The vision for the RLM is "A world class city where all communities enjoy a high quality of life and diversity". The mission statement associated with the vision is "To continuously improve the quality of life. Economic growth and eradicate poverty through best practice, sustainability and inclusive governance".</p> <p>The IDP lists seven strategic priorities, namely:</p> <ul style="list-style-type: none"> » Ensure a sustainable municipal financial viability and management. » Efficient provision of quality basic services and Infrastructure within a well-planned spatial structure. » Drive diversified economic growth and job creation. » Maintain, a clean, green, safe, and healthy environment for all. » Transform and maintain vibrant and sustainable rural development. » Uphold good governance and public participation principles. » Drive optimal municipal institutional development, transformation, and capacity building. <p>Diversified growth, job creation and the promotion of clean and green environment are of specific relevance to the proposed development. The strategic priorities are underpinned by eleven municipal goals, of which the following are relevant to the proposed Project:</p> <ul style="list-style-type: none"> » Goal 3: A well designed, habitable, clean, and green city » Goal 5: A new post mining world city. » Goal 6: A smart prosperous city. » Goal 7: A vibrant, creative, and innovative city. » Goal 11: City of sustainable and efficient resource management. <p>The IDP also identifies five strategic local economic development goals. The following are relevant to the proposed development:</p> <ul style="list-style-type: none"> » An enabling and conducive business environment to enhance RLM competitiveness as a destination of choice for tourism, investment, and trade.

Relevant policy	Relevance to the proposed project
	<p>» Accelerated and shared economic growth through skills development and enterprise development to promote an entrepreneurial culture that will contribute towards improving the livelihoods of the RLM communities.</p> <p>Section 3.3.4.3, Greenhouse gasses and climate change, refers to the risks posed to the RLM by climate change. The initiatives identified to address the risks that are relevant to the development include:</p> <p>» Decarbonization of Electricity –transition from coal powered electricity to renewable energy.</p> <p>» Decarbonization of Economy-transition to Green Economy projects Local Economic Development (LED).</p> <p>A SWOT analysis was undertaken as part of the IDP process. The following are relevant:</p> <p>Strengths</p> <ul style="list-style-type: none"> • Mining Town <p>Weaknesses</p> <ul style="list-style-type: none"> • Limited access to strategically located land • High rate of losses in water and electricity (due to issues such as slow to purchase electricity and affordability of Eskom) <p>Opportunities</p> <p>Opportunities for green energy/alternative sources</p> <ul style="list-style-type: none"> • Municipality strategically located along the N4 corridor • Potential for agricultural, tourism and mining related sectors. <p>Threats</p> <ul style="list-style-type: none"> • Declining mining economy • Ageing and failing Infrastructure. • Low levels of skills and education. • High dependency rate (Growing indigent register) • Undiversified economy • High unemployment rate • Low level of household income • Influx of migrant workers • Vandalism and theft from infrastructure network
<p>Bojanala Platinum District IDP (2021/22).</p>	<p>The Bojanala District Municipality is the highest order of the five municipalities that are within its jurisdiction and therefore within its IDP it is important to have massive programmes to build economic and social infrastructure i.e. 'continuing with to build, revamp and maintain electricity infrastructure, including generation, distribution and reticulation to ensure sufficiency and sustainability of supply and development of alternative energy sources".</p> <p>The proposed Project will increase the supply of electricity to the North West province, it will further ensure that jobs are created during the construction phase of the project, as well as increase energy to support industry at competitive prices i.e agriculture, mining etc. As the IDP of the District speaks to the development contributing to infrastructure development i.e electricity etc, this proposed Project is a key focus in the municipality's strategic objectives amongst others.</p>

3.7 Conclusion

The review of relevant legislation, policies and documentation pertaining to the proposed Project indicates that the establishment of the Solar PV Energy Facility and associated grid connection infrastructure is supported at a national, provincial, and local level, and that the proposed Project will contribute positively towards a number of targets and policy objectives.

4. SOCIAL PROFILE

Buffelspoort Solar Project (Pty) Ltd is proposing to develop a Solar Photovoltaic (PV) Energy Facility and associated infrastructure on Portions 75 and 134 of the Farm Buffelspoort 343JQ, located approximately 6 km west of Mooinooi, within the jurisdiction of the Rustenburg Local Municipality and the Bojanala Platinum District Municipality in the North-West Province.

The purpose of the facility will be to supply power to a private offtake through connecting to an existing 88kV Substation via a newly proposed ~ 2.5 km long 88kV single circuit overhead power line that will be routed over privately-owned properties from the onsite facility substation to the point of interconnection, north of the N4 Bakwena National highway (refer to Error! Reference source not found.).

Table 5-1: Spatial Context of the study area for the development of the Buffelspoort Solar PV Energy Facility

Province	North-West Province
District Municipality	Bojanala Platinum District Municipality
Local Municipality	Rustenburg Local Municipality
Ward number(s)	32
Nearest town(s)	Buffelspoort, Mooinooi (~6 km east of the project site)
Preferred access	N4 national and R104 arterial road

This Chapter provides an overview of the socio-economic environment of the province, DM, and LM within which the Buffelspoort Solar PV Energy Facility is proposed and provides the socio-economic basis against which potential issues can be identified.

Table 4.2 provides a baseline summary of the socio-economic profile of the Rustenburg LM within which the Buffelspoort Solar PV Energy Facility is located. In order to provide context against which the LM's socio-economic profile can be compared, the socio-economic profiles of the Bojanala DM, North West Province, and South Africa as a whole have also been considered. The data presented in this section have been derived from the 2011 Census, the Local Government Handbook South Africa 2019, the North West Provincial Spatial Development Framework (PSDF), and the Bojanala DM and Bojanala LM IDPs.

Table 4-2: Baseline description of the socio-economic characteristics of the area within which the Buffelspoort Solar PV Energy Facility is proposed

Location characteristics
<ul style="list-style-type: none"> » The Project is proposed within the North West Province, which is South Africa's largest, but least populated Province. » The Project is proposed within the Rustenburg LM of the Bojanala DM. » The Rustenburg LM is approximately 3 422.8 km² in extent.
Population characteristics
<ul style="list-style-type: none"> » In 2020 the Rustenburg LM had a population of 719 000 people which is about two-fifths of the figure in Bojanala (1 880 000). » In terms of race groups, Black Africans made up 90.5% of the population on the RLM, followed by Whites, 8.0% and Coloureds, 0.7%. The main first language spoken in the RLM was Setswana, 63.9% followed by Isixhosa (10.1%) and Afrikaans (5.6%).
Economic, education and household characteristics
<ul style="list-style-type: none"> » The dependency ratios for the RLM in 2016 was 58.7%.

- » The relatively low dependency ratio compared to other LMs reflects the employment and economic opportunities associated with the mining sector in the area.
- » The GDP of the RLM was R 72.9 billion in 2020 (up from R 37.4 billion in 2010). This made up 47.04% of the total GDP of the BDM in 2020, an increase from 43.74% in 2010.
- » In terms of the North West economy, the RLM contributed 24.65% to the GDP of North-West Province in 2020.
- » The RLM is therefore a key contributor to both the district and provincial economy.
- » The primary sector, specifically mining, contributed 77.2% towards the GVA of the RLM in 2020
- » Based on the data from the 2011 Census, 17.6% of the households in the RLM had no formal income, 2.8% earned less than R 4 800, 4.2% earned between R 5 000 and R 10 000 per annum, 11.2% between R 10 000 and R 20 000 per annum and 17.4% between R 20 000 and R 40 000 per annum.
- » Based on the Integrated Development Plan (IDP) 2022-2027, the official unemployment rate in the RLM in 2020 was 30.8%, while 58.5% were employed, and 10.7% were regarded as not economic active.
- » The unemployment rates for the RLM are lower than the Provincial rate of 17.1% and the district rate of 18.8%.
- » In terms of education levels, the number of people without any schooling accounts for 30.82% of the number of people without schooling in the district municipality, 9.2% of the province and 0.94% of the national..

Services

- » RLM had a total of 0.93% households with electricity for lighting only, a total of 86.06% households had electricity for lighting and other purposes and a total number 13.01% households did not use electricity. Of the households that had access to electricity, 76.7% had in house pre-paid meters, and 7.9% had conventional meters.
- » Based on the 2016 survey information, 95.2% of households in the RLM were supplied by a local or regional service provider, while 4.8% relied on their own sources.
- » Of the households supplied by service providers, 52.66% had piped water in their yards and 31.14% had piped water in their houses, while 0.69% had no formal piped water.
- » The relatively low number of households with piped water in their houses reflects the high percentage of shacks (29%) in the RLM.
61.92% of the households in the RLM had access to flush toilets (IDP 2020), while 12.02% relied on Ventilation Improved pit toilets and 23.47% did not have access to formal sanitation.
- » 72.44% of the households in the RLM had access to regular refuse removal weekly by authority, while 3.5% households had their refuse removed less often than weekly by the authority and 7.71% disposed of their waste at their own dump.(IDP 2020).

4.1 Proposed Project Site

The proposed Project Site is located in between the N4 Bakwena National highway and the R104 Old Rustenburg arterial roads (refer to **Figure 1.1**). The N4 Bakwena National road very much divides the Study Area (geographical area of approximately 154km²) into two (2) distinct land use categories, with the area to the north of this road predominantly given to large scale mining, and the southern section with a more agricultural and natural character. The topography of the region is similarly divided into two distinct classes, where the northern parts are described as plains and undulating plains, and the southern parts consist of mountains and tall hills.

These mountains are the northern foothills of the Magaliesberg Mountains, located further south of the study area. The Sterkstroom River traverses the study area from the south (from the Buffelspoort Dam) to the north towards the Beestekraal Dam, located north of the study area. Other than this river there are a number of non-perennial streams and farm or mining dams within the study area.

The most prominent (and visible) land use within the region is the mining activities, mining infrastructure, tailings dams and waste rock dumps. Interspersed with these mining activities are agricultural land uses, ranging from irrigated agriculture, dryland agriculture and citrus farming (orchards) predominantly to the south. Agricultural activities include the production of maize, wheat and sunflower crops, as well as cattle

farming. The farmers working these fields predominantly reside at homesteads or farm residences scattered throughout the Study Area. Homesteads located in closer proximity to the proposed Buffelspoort Solar PV Energy Facility Project Site include Buffelspoort, Mizpah, Maakiesaakie, Dassieklip and Elandsdrift.

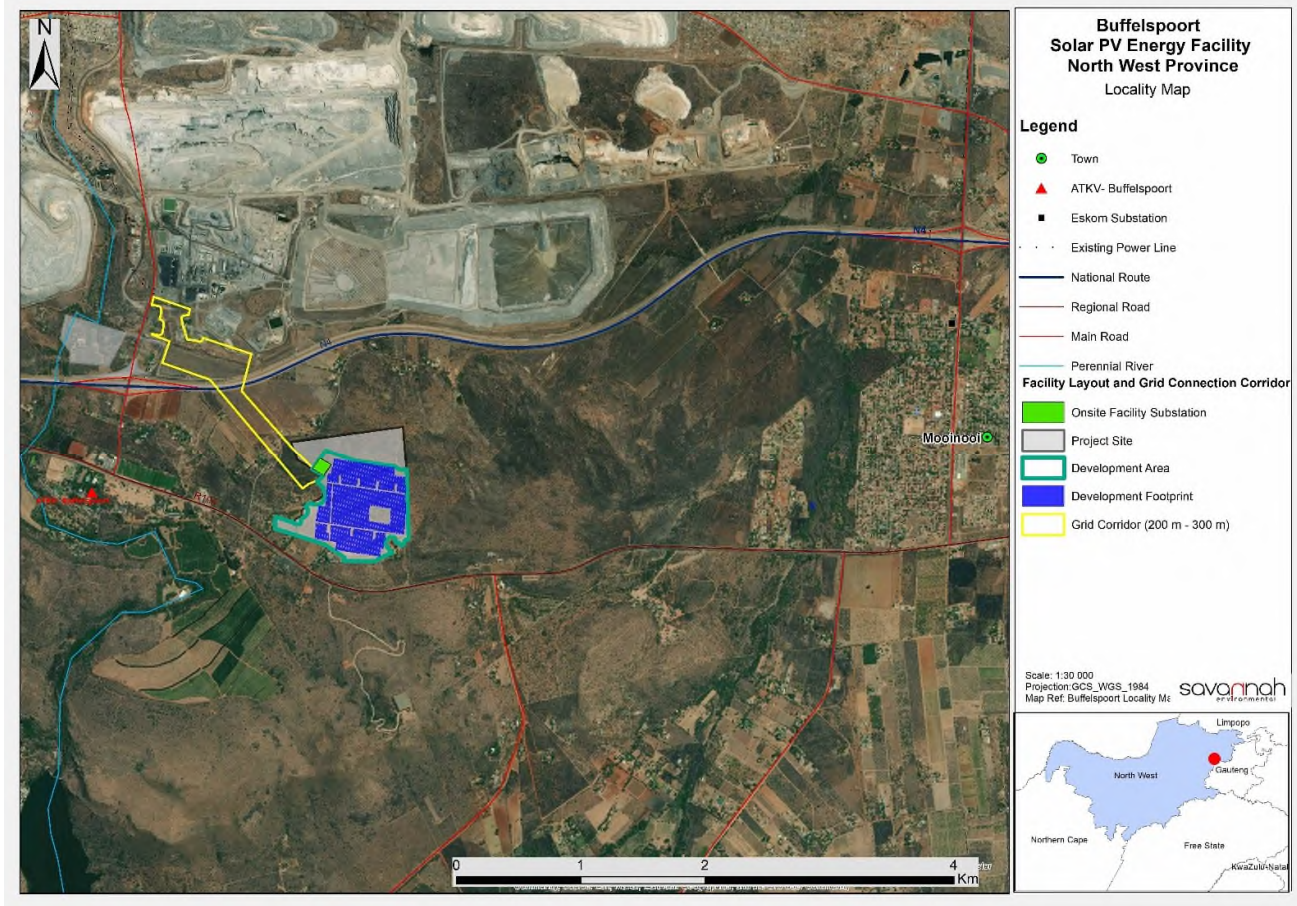


Figure 4.1: Locality map illustrating the location of the Buffelspoort Solar PV Energy Facility, North West Province.

5. SOCIAL IMPACT ASSESSMENT

This Chapter provides an overview of the potential social impacts that have been identified, which may be associated with the development of Buffelspoort Solar PV Energy Facility. Potential impacts have been identified based on the current understanding of the Project and the socio-economic environment within which it is proposed. Social impacts are expected to occur during both the construction and operation phases of the proposed Project. The nature of the impacts can be either be positive or negative and either mitigation or enhancement measures will be recommended for the management of the impacts depending on the classification of the impacts.

5.1 Social Impacts during the Construction Phase

The majority of social impacts associated with the Project are anticipated to occur during the construction phase of the Project and are typical of the type of social impacts generally associated with construction activities. These impacts will be temporary and short-term (~12 months) but could have long-term effects

on the surrounding social environment if not planned or managed appropriately. It is therefore necessary that the detailed design phase be conducted in such a manner as not to result in permanent social impacts associated with the ill-placement of project components and associated infrastructure or result in the mis-management of the construction phase activities.

The positive and negative social impacts identified and assessed for the **construction phase** includes:

- » creation of direct, indirect and induced employment opportunities
- » Economic multiplier effect
- » Influx of jobseekers and change in population structure
- » Safety and security impacts
- » Impacts on daily living and movement patterns
- » Nuisance impacts, including noise and dust

Table 5-1: Impact assessment on direct and indirect employment opportunities

Nature: Employment opportunities and skills development		
Impact description: The creation of employment opportunities and skills development opportunities during the construction phase for the country and local economy		
	Prior to Enhancement	Post Enhancement
Duration	Short-term (2)	Short-term (2)
Extent	Local – Regional (3)	Local-Regional (3)
Magnitude	Low (4)	Moderate (6)
Probability	Probable (3)	Highly Probable (4)
Significance	Low Positive (24)	Medium (48)
Enhancement measures: To enhance the local employment, skills development and business opportunities associated with the construction phase, it is recommended that the following measures be considered for implementation:		
<ul style="list-style-type: none"> » Adoption of a local employment policy to maximise the opportunities made available to the local labour force. The Buffelspoort Solar Project (Pty) Ltd should make it a requirement for contractors to implement a 'locals first' policy, especially for semi and low skilled job categories. » Enhance employment opportunities for the immediate local area, i.e., RLM. If this is not possible, then the broader focus areas should be considered for sourcing workers. » Consideration must be given to women during the recruitment process. » It is recommended that realistic local recruitment targets be set for the construction phase. 		
Residual Risks: Improved pool of skills and experience in the Study Area.		

Table 5-2: Economic multiplier effects

Nature: Multiplier effects on the local economy.		
Impact description: Significance of the impact from the economic multiplier effects from the use of local goods and services		
	Prior to Enhancement	Post Enhancement
Duration	Short term (2)	Short term (2)
Extent	Local, Regional and National (4)	Local (2)
Magnitude	Low (4)	Low (4)
Probability	Medium Probable (3)	Highly Probable (4)
Significance	Low Positive (24)	High (36)

<p>Enhancement measures:</p> <ul style="list-style-type: none"> » Investigate the possibility of procurement of construction materials, goods and products from the local suppliers where available or feasible, in order to source as much goods and services as possible to maximise the benefit of the local economy. » Buffelspoort Solar Project (Pty) Ltd should develop a database of local companies, specifically Historically Disadvantaged (HD) companies, which qualify as potential service providers (e.g., construction companies, catering companies, waste collection companies, security companies etc.) prior to the commencement of the tender process for construction contractors. These companies should be notified of the tender process and invited to bid for project-related work where applicable. » It is a requirement to source as much services as possible from the local suppliers, where feasible. » Engage with local authorities and business organisations to investigate the possibility of procurement of construction materials, goods and products from local suppliers, where feasible.
<p>Residual Risks: Growth and enhanced services in local, regional and National sectors.</p>

Table 5-3: Influx of jobseekers and change in population composition

<p>Nature: Migration from jobseekers and population changes.</p>		
<p>Impact description: Added pressure on economic and social infrastructure during construction as a result of immigration of people to the region</p>		
	Prior to Mitigation	Post Mitigation
Duration	Short-term (2)	Short-term (2)
Extent	Local (2)	Local (2)
Magnitude	Low (4)	Minor (2))
Probability	Medium Probability (3)	Improbable (1)
Significance	Low Negative (24)	Low Negative (12)
<p>Mitigation: No mitigation measures are proposed due to the neutral status of the impact.</p>		
<p>Residual Risks: Possibility of outside workers remaining in the neighbourhood after construction is completed and subsequent pressures on local infrastructure.</p>		

Table 5-4: Assessment of safety and security impacts

<p>Nature: Safety and security</p>		
<p>Impact description: Temporary increase in safety and security impacts associated with influx of job seekers during the construction phase</p>		
	Prior to Mitigation	Post Mitigation
Duration	Short-term (2)	Short-term (2)
Extent	Local (2)	Local (2)
Magnitude	Low (4)	Low (4)
Probability	Medium Probability (3)	Medium probability (3)
Significance	Low Negative (27)	Low Negative (16)

<p>Mitigation:</p> <ul style="list-style-type: none"> » Access in and out of the Development Footprint should be strictly controlled by the Buffelspoort Solar Project Pty Ltd. » Appropriate security procedures need to be designed and implemented at the Project Site to limit access to the Development Footprint. » No open fires on the site for heating, smoking or cooking will be allowed except in designated areas. » Adequate firefighting equipment needs to be available on site and selected construction staff needs to be provided with firefighting training. » A comprehensive employee induction programme must be prepared to cover site access protocols, fire management and road safety. » The Buffelspoort Solar Project Pty Ltd needs to allow for the role of Community Liaison. A grievance mechanism should be implemented that documents how the local community can express any complaints or grievances during the construction process.
<p>Residual Risks: None anticipated.</p>

<p>Nature: Safety and security</p>			
<p>Impact description: Temporary increase in safety and security impacts associated with influx of job seekers during the construction phase</p>			
	Rating	Motivation	Significance
Prior to Mitigation			
Duration	Short-term (2)	Will be limited to the construction phase which is 12 months.	Low Negative (27)
Extent	Local (2)	Safety concerns will affect nearby communities.	
Magnitude	Low (4)	Could place the lives of neighbouring community members at risk.	
Probability	Medium Probable (3)	It is anticipated that the crime is likely to increase due to the influx of job seekers during the construction phase.	
<p>Mitigation:</p> <ul style="list-style-type: none"> » Access in and out of the Development Footprint should be strictly controlled by the Buffelspoort Solar Project Pty Ltd. » Appropriate security procedures need to be designed and implemented at the Project site to limit access to the Development Footprint. » No open fires on the site for heating, smoking or cooking will be allowed except in designated areas. » Adequate firefighting equipment needs to be available on site and selected construction staff needs to be provided with firefighting training. » A comprehensive employee induction programme must be prepared to cover site access protocols, fire management and road safety. » The Buffelspoort Solar Project Pty Ltd needs to allow for the role of Community Liaison. A grievance mechanism should be implemented that documents how the local community can express any complaints or grievances during the construction process. 			

Post Mitigation			
Duration	Short-term (2)	Similar as for pre-mitigation	Low Negative (16)
Extent	Local (2)	Safety measures will likely restrict potential impacts on nearby communities	
Magnitude	Low (4)	Appropriate mitigation will reduce the security and safety risk the Project poses.	
Probability	Improbable (1)	Similar as for pre-mitigation	
Residual Risks: None anticipated.			

Table 5-5: Assessment of impacts on daily living and movement patterns.

Nature: Disruption of daily living and movement patterns.		
Impact description: Temporary increase in traffic disruptions and movement patterns during the construction phase		
	Prior to Mitigation	Post Mitigation
Duration	Short-term (2)	Short-term (2)
Extent	Local – National (3)	Local (2)
Magnitude	Moderate (6)	Low (4)
Probability	Medium Probability (3)	Medium Probability (3)
Significance	Medium Negative (30)	Low Negative (16)
Mitigation:		
<ul style="list-style-type: none"> » All vehicles used during the construction phase by contractors must be road worthy, and drivers must be qualified, obey traffic rules, follow speed limits and be made aware of the potential road safety issues. » Heavy vehicles used during the construction phase by contractors should be inspected regularly to ensure their road safety worthiness. » Where possible to try and avoid heavy vehicle activity during 'peak' traffic hours (when people are driving to and from work). » Damage / wear and tear caused by construction related traffic to the roads must be repaired. » A comprehensive employee induction programme must be prepared to cover site access protocols, fire management and road safety. The Buffelspoort Solar Project Pty Ltd needs to allow for the role of Community Liaison. A grievance mechanism should be implemented that documents how the local community can express any complaints or grievances during the construction process. 		
Residual Risks: None anticipated.		

Table 5-6: Assessment of nuisance impacts (noise and dust)

Nature : Nuisance impacts (noise& dust)		
Impact description: Nuisance impacts in terms of a temporary increase in noise and dust		
	Prior to Mitigation	Post Mitigation
Duration	Short-term (2)	Short-term (2)
Extent	Local (2)	Local (2)
Magnitude	Moderate (6)	Low (4)
Probability	Highly Probable (4)	Highly Probable (1)
Significance	Medium Negative (36)	Low Negative (18)

<p>Mitigation:</p> <ul style="list-style-type: none"> » Dust suppression measures should be implemented, such as mechanical wetting or chemical stabilisation on a regular basis to avoid generating excessive dust on site. » Vehicles carrying emitting loads such as soil, sand etc. needs to be fitted with tarpaulins or covers to avoid the generation of nuisance dust. » The Buffelspoort Solar Project Pty Ltd needs to allow for the role of Community Liaison. A grievance mechanism should be implemented that documents how the local community can express any complaints or grievances during the construction process.
<p>Residual Risks: None anticipated</p>

5.2 Potential Social impacts during the Operation Phase

It is anticipated that the Buffelspoort solar facility will operate for approximately 15 years, or as long as required by the private off-taker.

The potential positive and negative social impacts that could arise because of the operation of the proposed Project include the following:

- » Direct and indirect employment opportunities
- » Development of renewable energy infrastructure
- » Visual impact and sense of place impacts

Table 5-7: Employment opportunities and skills development

<p>Nature: Job creation during operation.</p>		
<p>Impact description: The creation of employment opportunities and skills development opportunities during the operation phase for the country and local economy</p>		
	Prior to Enhancement	Post Enhancement
Duration	Long term (4)	Long-term (4)
Extent	Local -Regional (3)	Local - Regional (3)
Magnitude	Low (4)	Low (4)
Probability	Medium Probable (3)	High Probable (4)
Significance	Medium Positive (33)	Medium Positive (44)
<p>Enhancement measures:</p> <ul style="list-style-type: none"> » It is recommended that a local employment policy is adopted by the Project Developer to maximise the project opportunities made available to the local community. Enhancement of employment opportunities for the immediate local area, RLM, if this is not possible, then the broader focus areas should be considered for sourcing employees. » The recruitment selection process should seek to promote gender equality and the employment of women wherever possible 		
<p>Residual Risks: Improved pool of skills and experience in the local area</p>		

Table 5-8: Development of clean, renewable energy infrastructure

<p>Nature: Development of clean, renewable energy infrastructure.</p>		
<p>Impact description: Development of clean, renewable energy infrastructure</p>		
	Prior to Enhancement	Post Enhancement

Duration	Long term (4)	Long term (4)
Extent	Local – Regional -National (4)	Local – Regional -National (4)
Magnitude	Moderate (6)	Moderate (6)
Probability	Highly Probable (4)	Highly Probable (4)
Significance	Medium Positive (46)	Medium Positive (46)
Enhancement measures: None anticipated		
Residual Risks: Reduce carbon emissions through the use of renewable energy and contributing to efforts to reduce global warming		

Table 5-9: Assessment of the visual and impacts on sense of place

Nature: Visual impacts and impacts on sense of place		
Impact description: Visual impacts and sense of place impacts associated with the operation phase of the Project		
	Prior to Mitigation	Post Mitigation
Duration	Long term (4)	N.A. – Mitigation not possible.
Extent	Local (2)	N.A. – Mitigation not possible.
Magnitude	Low (4)	N.A. – Mitigation not possible.
Probability	Improbable (2)	N.A. – Mitigation not possible.
Significance	Low Negative (18)	N.A. – Mitigation not possible
Mitigation: In order to successfully reduce the visual impact and the influence on sense of place during the operating phase of the planned project, it is advised that the recommendations provided in the Visual Impact Assessment (Specialist study) be followed in this regard.		
Residual Risks: None anticipated if the visual impact will be removed after decommissioning, provided the Solar PV Energy Facility infrastructure is removed and the site is rehabilitated to its original (current) status		

5.3 Assessment of Cumulative Impacts

The EIA Regulations, 2014 (GNR 326) define a cumulative impact as follows:

“Cumulative impact in relation to an activity, means the past, current and reasonably foreseeable future impact of an activity, considered together with the impact of activities associated with that activity that in itself may not be significant, but may become significant when added to the existing and reasonably foreseeable impacts eventuating from similar or diverse activities.”

The potential for cumulative impacts to occur as a result of the projects is therefore likely. Potential cumulative impacts identified for the Project include positive impacts on the economy, business development, and employment, as well as negative impacts such as on pressure on local services and change in visual impacts

Potential cumulative social impacts identified for the project include positive impacts on the economy, business development, and employment, as well as such as on pressure on local services and change in visual impacts.

Nature: An increase in employment opportunities, skills development and business opportunities with the establishment of more than one solar energy facility		
	Overall impact of the proposed project considered in isolation	Cumulative impact of the project and other projects in the area
Extent	Local -regional (3)	Local-regional (3)
Duration	Long-term (4)	Long-term (4)
Magnitude	Low (4)	Moderate (6)
Probability	Medium Probability (3)	Medium Probability (3)
Significance	Moderate (33)	Moderate (52)
Status (positive or negative)	Positive	Positive
Reversibility	N/A	N/A
Irreplaceable loss of resources?	N/A	N/A
Can impacts be mitigated?	Yes	Yes
Confidence in findings: High.		
Mitigation:		
<ul style="list-style-type: none"> » The establishment of solar energy facility in the area does have the potential to have a positive cumulative impact on the area in the form of opportunity for employment seekers to improve their skills and permanent employment during operational phase. » The positive benefits will be enhanced if local employment policies are adopted, and local services providers are utilised by the Project Proponent to maximise the project opportunities available to the local community. 		

Nature: Positive impacts and change to the local economy with an in-migration of, businesses and jobseekers to the Project area		
	Overall impact of the proposed project considered in isolation	Cumulative impact of the project and other projects in the area
Extent	Local (2)	Local-regional (3)
Duration	Long-term (4)	Long-term (4)
Magnitude	Minor (2)	Low (4)
Probability	Improbable (1)	Low Probability (2)
Significance	Low (7)	Low (22)
Status (positive or negative)	Negative	Negative
Reversibility	Yes	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	Yes	
Confidence in findings: High.		
Mitigation:		
<ul style="list-style-type: none"> » Develop a recruitment policy / process , which will focus on the sourcing of labour locally, where available. » Develop and implement a recruitment protocol in consultation with the municipality and local community leaders. Ensure that the procedures for applications for employment are clearly communicated. 		

Nature: Visual impact on sense of place and landscape character		
	Overall impact of the proposed project considered in isolation	Cumulative impact of the project and other projects in the area
Extent	Local (2)	Local-regional (3)
Duration	Long-term (4)	Long-term (4)

Magnitude	Low (4)	Moderate (6)
Probability	Medium Probability (3)	Medium Probability (3)
Significance	Low (27)	Medium (39)
Status (positive or negative)	Negative	Negative
Reversibility	Yes	
Irreplaceable loss of resources?	No	
Can impacts be mitigated?	No, only best practice measures can be implemented	
Confidence in findings: High.		
Mitigation:		
» To effectively mitigate the visual impact during the operational phase of the proposed Project, It is suggested that the recommendations made in the Visual Impact Assessment (Specialist study) should be followed in this regard.		

5.4 Assessment of Decommissioning

Typically, major social impacts associated with the decommissioning phase are linked to the loss of jobs and associated income. Other impacts associated with this phase are similar to the impacts proposed during the construction phase associated with construction activities. This has implications for the households who are directly affected, the communities within which they live, and the relevant local authorities. The impact of the decommissioning phase is expected to be negligible due to the small number of permanent employees affected. The potential impacts associated with decommissioning phase can also be effectively managed with the implementation of a retrenchment and downscaling programme. With mitigation, the impacts are assessed to be Low (negative).

Recommended mitigation measures

- » Buffelspoort Solar Project should make sure that all employees who stand to lose their employment when the plant is decommissioned receive their retrenchment packages.
- » When the proposed facility is decommissioned, all structures and infrastructure associated with it should be dismantled and moved off-site; and

5.5 Assessment of No-Development Option

The “no-go” alternative is the option of not constructing the Buffelspoort Solar PV Energy Facility. The implementation of the proposed Project is expected to result in a number of positive and negative social impacts.

Potential negative social impacts associated with the construction and operation of the Project include the following:

- » Potential influx of job seekers and an associated change in population and increase in pressure on basic services.
- » Potential safety and security impacts.
- » Potential impacts on daily living and movement patterns.
- » Potential nuisance impacts (noise and dust).
- » Potential visual impact and impact on the sense of place.

Potential positive social impacts associated with the construction and operation of the Project include the following:

- » Potential direct, indirect and induced employment opportunities.
- » Potential economic multiplier effect.
- » Clean energy.
- » Network strengthening – to an extent.
- » Reduction of load requirement for Eskom (albeit small).

The impacts of pursuing the “no-go” alternative can therefore be summarised as follows:

- » The benefits would be that there is no disruption from nuisance impacts (noise and dust during construction), visual impacts and safety and security impacts. The impact is therefore neutral.
- » There would also be an opportunity loss in terms of limited job creation, skills development, community upliftment and associated economic business opportunities for the local economy. This impact is considered to be negative.
- » The opportunity to strengthen the grid within the municipal area would be lost which will have a negative impact on economic growth and development and therefore result in negative social impacts.
- » Loss of revenue generated by the Project – municipal rates and taxes, etc.

Recommended mitigation measures

The proposed facility should be developed, however the implementation of the mitigation and enhancement measures identified in the SIA and other specialist studies is required. The location, design and layout of the planned Solar PV Energy Facility must consider the potential impacts on the local environment and sense of place.

6. CONCLUSION AND RECOMMENDATIONS

This SIA has focused on the collection of primary data to identify and assess social issues and potential social impacts. Secondary data was collected and presented in a literature review and primary data was collected through the public participation process and telephonic consultation with key stakeholders. The environmental assessment framework for assessment of impacts and the relevant criteria were applied to evaluate the significance of the potential impacts.

A summary of the potential positive and negative impacts identified for the construction and operation phases of the project are presented in Error! Reference source not found. and Error! Reference source not found.. A summary of the potential positive and negative cumulative social impacts identified for the project is provided in Error! Reference source not found..

Table 6 -1: Summary of potential social impacts identified for the construction phase of the Buffelspoort Solar PV Energy Facility

Impact	Status	Significance
Positive Impacts		
Creation of direct and indirect employment and skills development opportunities.	Positive	Medium
Economic multiplier effects	Positive	Medium
Negative Impacts		
In-migration of people (non-local workforce and jobseekers).	Negative	Medium
Safety and security impacts	Negative	Medium
Impacts on daily living and movement patterns	Negative	Low
Nuisance impact (noise and dust)	Negative	Low

Table 6-2: Summary of potential social impacts identified for the operation phase of the Buffelspoort Solar PV Energy Facility

Impact	Status	Significance
Positive Impacts		
Direct and indirect employment and skills development opportunities	Positive	Medium
Negative Impacts		
Visual and sense of place impacts	Negative	Low

Table 6-3: Summary of potential cumulative social impacts identified for the project

Cumulative Impact	Overall impact of the proposed project considered in isolation	Cumulative impact of the project and other projects in the area
Positive Cumulative Impacts		
Cumulative impact from employment, skills and business opportunities and skills development	Medium	Medium
Cumulative Impact	Overall impact of the proposed project considered in isolation	Cumulative impact of the project and other projects in the area

Negative Cumulative Impacts		
Cumulative impact with large scale in-migration of people	Low	Medium
Visual and sense of place impacts	Low	Medium
Cumulative impact on the sense of place and landscape character	Low	Medium

6.1 Key findings and Recommendations

Key Findings

From a social perspective, it is concluded that the Project is supported, but that mitigation measures should be implemented and adhered to. Positive and negative social impacts have been identified. The assessment of the key issues indicated that there are no negative impacts that can be classified as fatal flaws, and which are of such significance that they cannot be successfully mitigated. Positive impacts could be enhanced by implementing appropriate enhancement measures and through careful planning. Based on the social assessment, the following general findings can be made:

- » The potential negative social impacts associated with the construction phase are typical of construction related projects and not just focused on the construction of PV facilities and associated infrastructure (these relate to intrusion and disturbance impacts, safety and security) and could be reduced with the implementation of the mitigation measures proposed.
- » Employment opportunities will be created in the construction and operational phases and the impact is rated as positive even if only a small number of individuals will benefit in this regard.
- » The proposed Project could assist the local economy in creating entrepreneurial development, especially if local businesses could be involved in the provision of general material and services during the construction and operational phases.
- » Capacity building and skills training amongst employees are critical and would be highly beneficial to those involved, especially if they receive portable skills to enable them to also find work elsewhere and in other sectors.
- » The proposed development also represents an investment in infrastructure for the generation of clean, renewable energy, which, given the challenges created by climate change, represents a positive social benefit for society.

6.2 Recommendations

The following recommendations are made based on the Social Impact Assessment during the stakeholder engagement process. The proposed mitigation measures should be implemented to limit the negative impacts and enhance the positive impacts. Based on the social assessment, the following recommendations are made:

- » In terms of employment related impacts, it is important to consider that job opportunities for the unskilled and semi-skilled are scarce commodities in the study area and could create competition among the local unemployed. Introducing an outside workforce will therefore most likely worsen local endeavors to obtain jobs and provoke discontent as well as put pressure on the local services available. Local labour should be utilised to enhance the positive impact of employment creation in the area. Local businesses should be involved with the construction activities where possible. It is imperative that local labour be sourced to ensure that benefits accrue to the local communities. Preference should thus be given to the use of local labour during the construction and operational phases of the Project as far as possible.

- » Locals should also be allowed an opportunity to be included in a list of possible local suppliers and service providers, enhancing the multiplier effect. This aspect would serve to mitigate other subsequent negative impacts such as those associated with the inflow of outsiders to the area, the increased pressure on the infrastructure and services in the area, as well as the safety and security concerns.
- » Impacts associated with the construction period should be carefully mitigated to minimise any dust and noise pollution.
- » Safety and security concerns should be considered during the planning and construction phases of the proposed Project.

6.3 Conclusion

The proposed Project and associated infrastructure will create a number of potential socio-economic opportunities and benefits and is unlikely to result in permanent damaging social impacts. From a social perspective it is concluded that the Project is acceptable subject to the implementation of the recommended mitigation and enhancement measures and management actions identified for the Project. Considering the findings of the report and potential for mitigation it is the reasoned opinion of the specialist that the Project can be authorised from a social perspective.

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